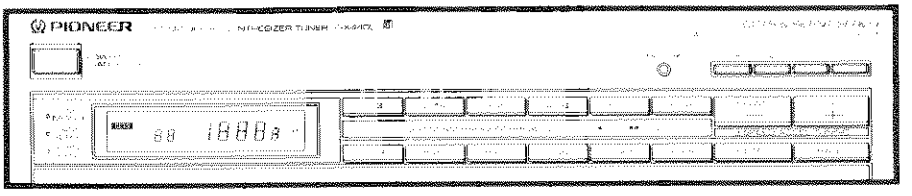
Operating Instructions

FM/AM DIGITAL SYNTHESIZER TUNER

F-X440L SPARE PARTS MASTER
F-X440



* Illustration shows model F-X440L

Thank you for buying this Pioneer product.
Please read through these operating instructions so you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.
In some countries or regions, the shape of the power plug and power outlet may sometimes differ from that shown in the explanatory drawings. However, the method of connecting and operating the unit is the same.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

IMPORTANT NOTICE
[For U.S. and Canadian models]

The serial number for this equipment is located on the rear panel. Please write this serial number on your enclosed warranty card and keep it in a secure area. This is for your security.

[For Canadian model]

CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

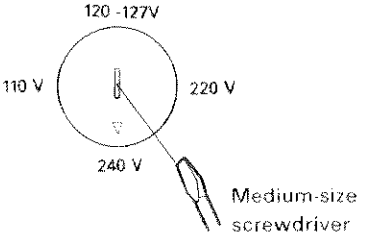
LINE VOLTAGE SELECTOR SWITCH

Only multi-voltage models are provided with this switch. U.S., Canadian, European, U.K., and Australian models are not provided with this switch.
Mains voltages in Saudi Arabia are 127V and 220V only. Never use this model with 110V setting in Saudi Arabia.

The line voltage selector switch is on the rear panel. Before your model is shipped from the factory, this switch is set to the power requirements of the destination. Check that it is set properly before plugging the power cord into the AC wall socket. If the voltage is not properly set or if you move to an area where the voltage requirements differ, adjust the selector switch as follows.

1. Use a medium-size screwdriver.
2. Insert the screwdriver into the groove on the voltage selector, and adjust so that the tip of the arrow points to the voltage value of your area.

Set the voltage selector for the voltage in your area.



CONTENTS

Features 6
Connections (and Accessories) 6
Front Panel Facilities 7
Listening to Broadcasts 8
Presetting FM and AM (MW or LW) Stations 8
Hints for Better Reception 9
Troubleshooting 10
Specifications 11

PIONEER®
The future of sound and vision.

IMPORTANT 1

The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT 2

If the apparatus is fitted with AC mains power outlet(s), see REAR PANEL FACILITIES for convenient connection of additional Hi-Fi component(s). Make all connections to the AC outlet(s) and the signal terminals first. Connect the plug to the wall socket last, make sure that the power switch is off. Disconnect the wall plug when the equipment is not in (regular) use, e.g. when on vacation.

FOR USE IN THE UNITED KINGDOM

WARNING: This plug must only be connected to electronic apparatus equipped with suitable sockets.
If not, cut off the plug and fit an appropriate type in accordance with the instructions below.
The cut-off plug must be disposed of as an electrical shock hazard could exist if connected to a socket outlet.

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured marking identifying the terminals in your plug proceed as follows.
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.
Equipment sold in the U.K. is not supplied with a power plug.

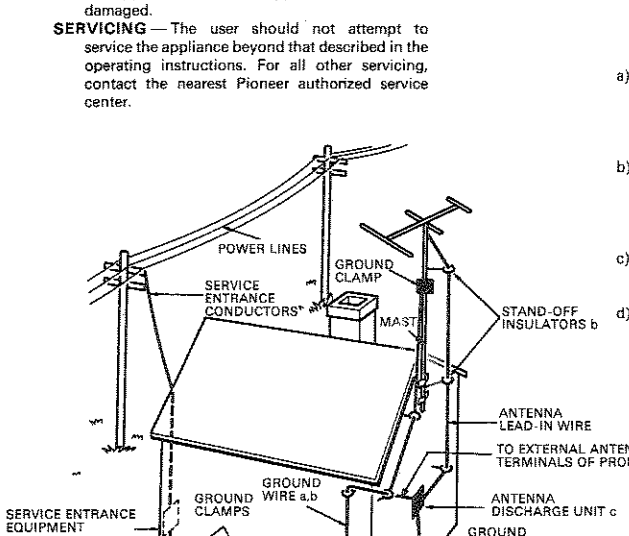
SAFETY INSTRUCTIONS

READ INSTRUCTIONS — All the safety and operating instructions should be read before the appliance is operated.
RETAIN INSTRUCTIONS — The operating instructions should be retained for future reference.
HEED WARNING — All warnings on the appliance and in the operating instructions should be adhered to.
FOLLOW INSTRUCTIONS — All operating and use instructions should be followed.
WATER AND MOISTURE — The appliance should not be used near water — for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.
LOCATION — The appliance should be installed in a stable location.
WALL OR CEILING MOUNTING — The appliance should not be mounted to a wall or ceiling.
VENTILATION — The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
HEAT — The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
POWER SOURCES — The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
POWER-CORD PROTECTION — Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
POLARIZATION — If your purchased product is provided with a polarized power plug, please read the following instructions. This product is equipped with a polarized alternating current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
CLEANING — The appliance should be cleaned only with a polishing cloth or a soft dry cloth. Never clean with furniture wax, benzine, insecticides or other volatile liquids since they may corrode the cabinet.
POWER LINES — An outdoor antenna should be located away from power lines.
NONUSE PERIODS — The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
OBJECT AND LIQUID ENTRY — Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
DAMAGE REQUIRING SERVICE — The appliance should be serviced by a Pioneer authorized service center or qualified service personnel when:

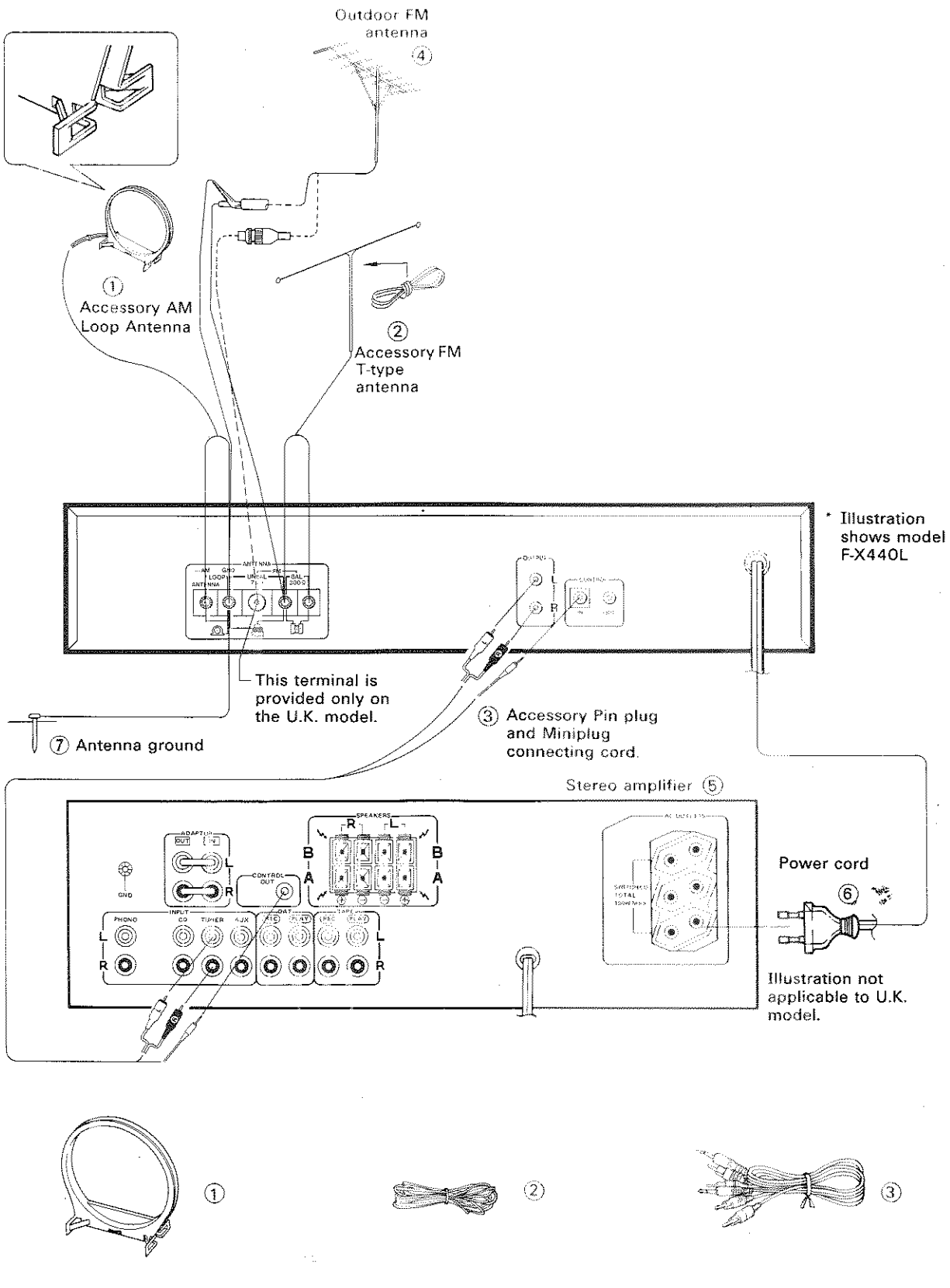
- The power-supply cord or the plug has been damaged; or
- Objects have fallen, or liquid has been spilled into the appliance; or
- The appliance has been exposed to rain; or
- The appliance does not appear to operate normally or exhibits a marked change in performance; or
- The appliance has been dropped; or the enclosure damaged.

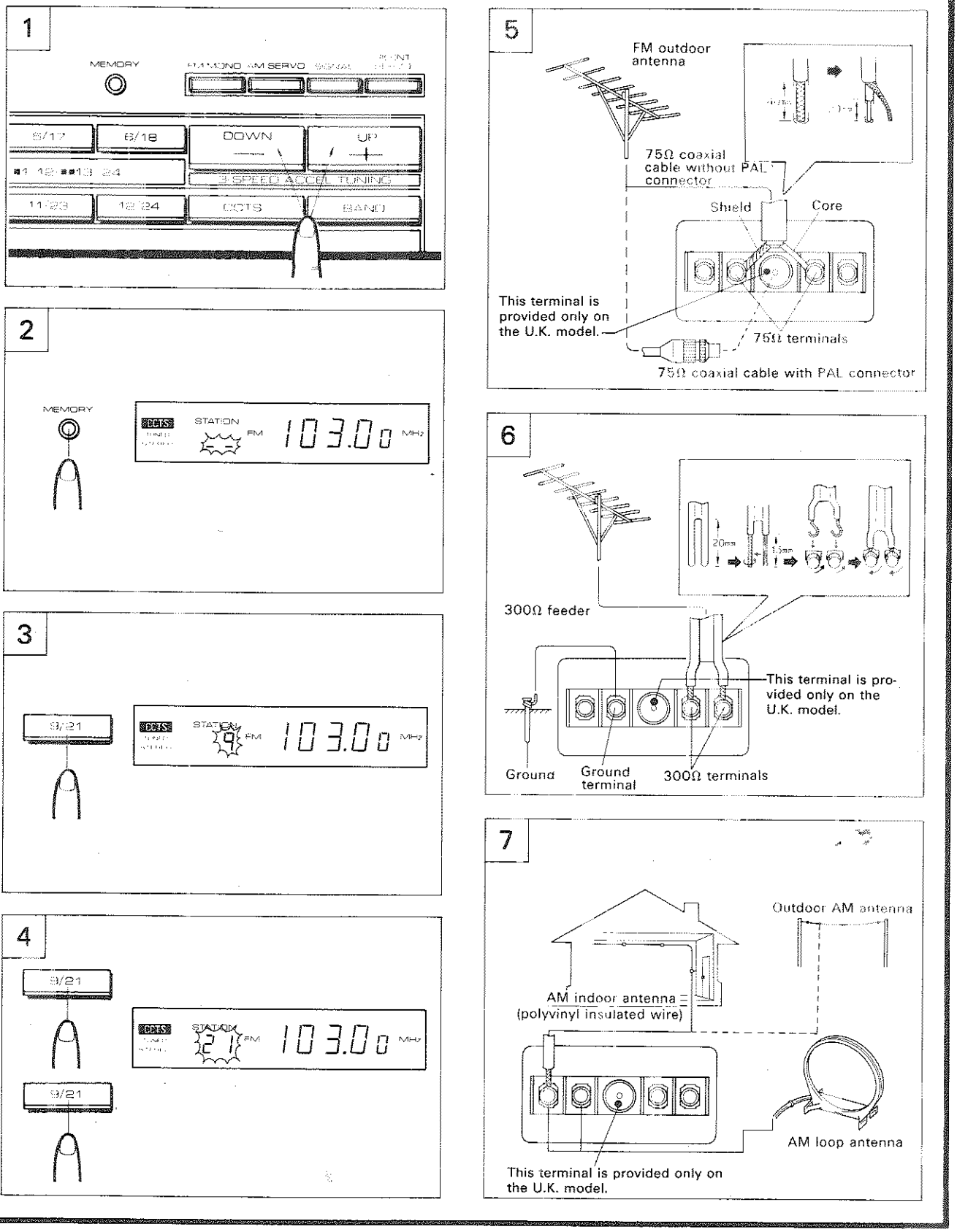
SERVICING — The user should not attempt to service the appliance beyond that described in the operating instructions. For all other servicing, contact the nearest Pioneer authorized service center.

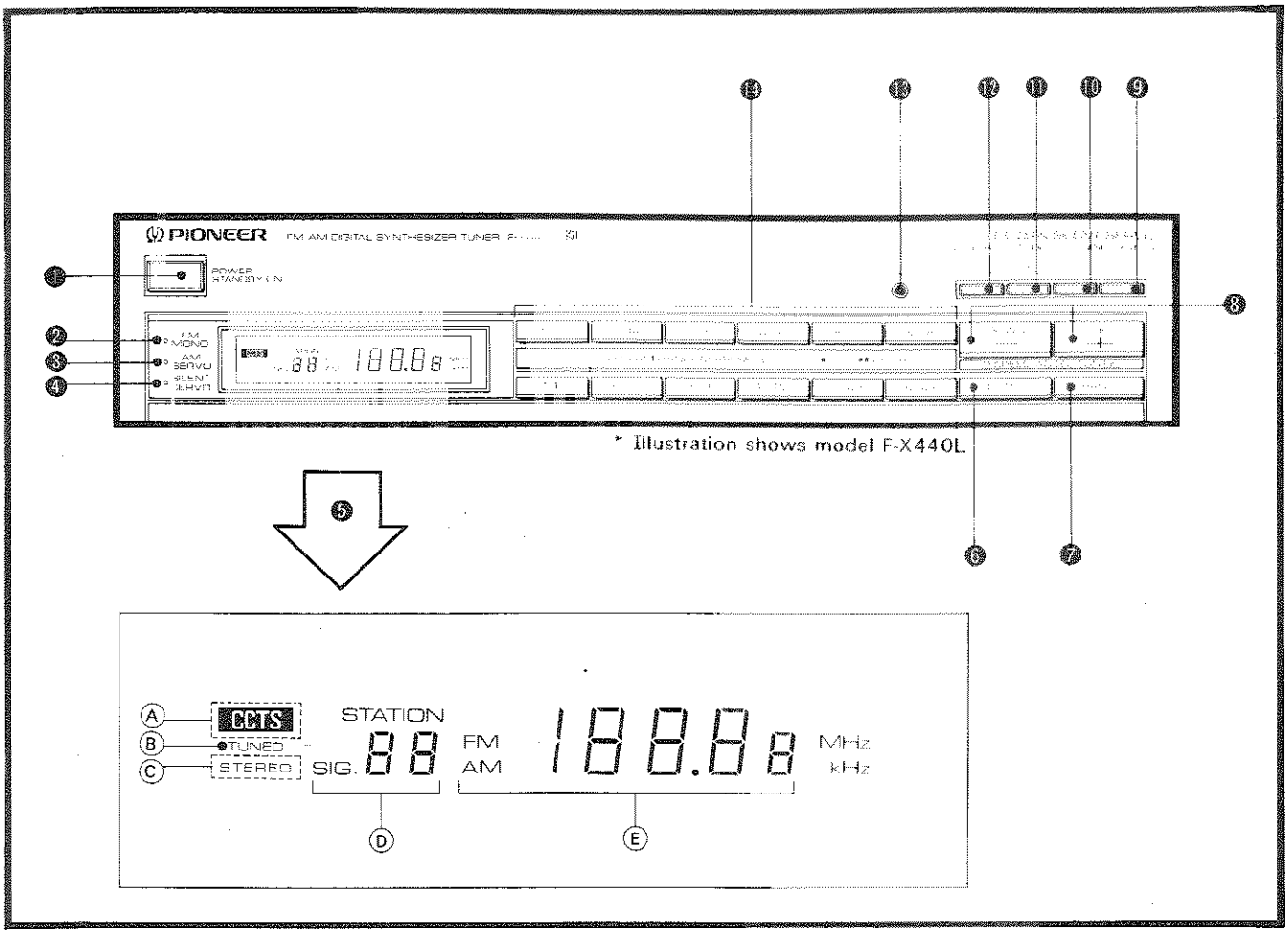
OUTDOOR ANTENNA GROUNDING — If an outside antenna is connected to the antenna terminal, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges.
In the U.S.A. section 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Fig. A.


POWER LINES
GROUND CLAMP
SERVICE ENTRANCE CONDUCTORS
MAST
STAND-OFF INSULATORS b
ANTENNA LEAD-IN WIRE
TO EXTERNAL ANTENNA TERMINALS OF PRODUCT
GROUND WIRE a,b
GROUND CLAMPS
SERVICE ENTRANCE EQUIPMENT
ANTENNA DISCHARGE UNIT c
GROUND WIRE a,b
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (e.g. interior metal water pipe)
OPTIONAL ANTENNA GROUNDING ELECTRODE DRIVEN 8 FEET (2.44 m) INTO THE EARTH IF REQUIRED BY LOCAL CODES SEE NEC SECTION 810-21 (f).
BONDING JUMPER d
FIG.A

a) Use No. 10 AWG (5.3 mm^2) copper, No. 8 AWG (8.4 mm^2) aluminum, No. 17 AWG (1.0 mm^2) copperclad steel, bronze wire, or larger as ground wire.
b) Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4 feet (1.22 meters) to 6 feet (1.83 meters) apart.
c) Mount antenna discharge unit as closely as possible to where lead-in enters house.
d) Use jumper wire not smaller than No 6 AWG (13.3 mm^2) copper, or the equivalent, when a separate antenna-grounding electrode is used.
See NEC Section 810-21 (j).


Outdoor FM antenna
④
① Accessory AM Loop Antenna
② Accessory FM T-type antenna
* Illustration shows model F-X440L
This terminal is provided only on the U.K. model.
⑦ Antenna ground
③ Accessory Pin plug and Miniplug connecting cord.
Stereo amplifier ⑤
Power cord
⑥
Illustration not applicable to U.K. model.
①
②
③


1
MEMORY
DOWN
UP
3-SPEED ACCEL TUNING
CCTS
BAND
2
MEMORY
CCTS
STATION
FM
MHz
3
CCTS
STATION
FM
MHz
4
CCTS
STATION
FM
MHz
5
FM outdoor antenna
75Ω coaxial cable without PAL connector
Shield
Core
This terminal is provided only on the U.K. model.
75Ω terminals
75Ω coaxial cable with PAL connector
6
300Ω feeder
20mm
15mm
This terminal is provided only on the U.K. model.
Ground
Ground terminal
300Ω terminals
7
Outdoor AM antenna
AM indoor antenna
(polyvinyl insulated wire)
AM loop antenna
This terminal is provided only on the U.K. model.



FM/AM CHANNEL STEP SWITCH

This switch is not provided on models for use in Europe or U.K.

The AM/FM channel step switch is located on the rear panel of the digital synthesizer tuner. Before the tuner leaves the factory, this switch is set to the channel allotment plan of the area in which the tuner is sold. When the TUNING switch is given a single push, the frequency display will change in following unit.

[100 kHz/10 kHz] position:
Set to this position for areas with FM reception step of 100 kHz and AM 10 kHz.

[50 kHz/9 kHz] position:
Set to this position for areas with FM reception step of 50 kHz and AM 9 kHz.

NOTE:
When unsure about the channel allocation for your area, consult your dealer for correct information.

The channel step will not change if the CHANNEL STEP switch is operated with the power ON.
After operating the CHANNEL STEP switch, if you turn the POWER switch OFF and then ON again the channel step will switch over.
If you operate the CHANNEL STEP switch, the stations that were memorized before the switch was operated will be erased.

FEATURES

CCTS (Computer Controlled Tuning System) tuning for optimum sound quality

- Reduces tracking errors when you are receiving FM and AM broadcasts.
- Provides a digital indication of the electric field strength of the received broadcast.

24 FM/AM random preset

SILENT SERVO circuit

Since the clock frequency is not needed after tuning has been completed, this circuit cuts it out, thereby improving sound quality by avoiding the noise and intermodulation distortion that could be caused by spurious high frequency "beat" interference.

AM SERVO circuit

This dramatically reduces distortion by actively adjusting AGC (automatic gain control) response time during and after tuning.

CONNECTIONS (AND ACCESSORIES) (See page 3)

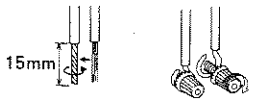
① Accessory AM Loop Antenna

- Unfold all four legs of the AM loop antenna toward the outside, and insert the stopper inside the legs into the hole in the AM loop antenna to fix it in position.
- Set the antenna on a level surface, and point in the direction that gives optimum reception.
- Do not install the antenna in locations where it touches the cover of the unit or other metal objects, or near a CD player, personal computer, or television set.

② Accessory FM T-type antenna

- Use for FM reception until special-purpose FM antenna is installed.
- Stretch both ends taut and affix to a wall, etc.

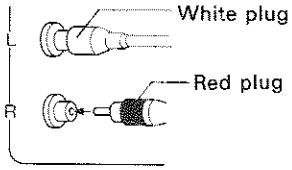
CONNECTING THE FM T-TYPE ANTENNA AND AM LOOP ANTENNA



1. Strip the end of the wires.
2. Wrap the end of the wire in a clockwise direction around the base of the terminals and tighten the terminals to secure.

③ Accessory Pin plug and Miniplug connecting cord.

- Connect the white plug to the white terminal (L) and the red plug to the red terminal (R).



- Make sure that there is a proper connection.

The OUTPUT jacks of this unit are dull tin-plated, aiming at high audio quality.

④ Outdoor FM antenna

⑤ Stereo amplifier

⑥ Power cord
Plug the power cord into (SWITCHED) the auxiliary power outlet on the amplifier or into an AC wall socket.

⑦ Antenna ground
Although grounding is not always necessary for reception, it is recommended for protection against damage from lightning if an outdoor FM antenna is used. Grounding is recommended as well to help reduce noise and hum.

NOTE:
Never make the ground connection to a gas pipe as sparks could cause the gas to ignite.

*** Control Terminals**
When using together with Pioneer component, with [CS] mark, connect the CONTROL IN terminal on the rear panel of the tuner to the CONTROL OUT terminal on the component. This will enable the tuner to be controlled from a distance, with the remote control unit supplied with the component.

When this feature is not used, connection is not necessary.

- The remote control unit can be used for band selecting and preset station tuning operations.
- Connect it using accessory miniature phone plugs.
- For instructions regarding connection and operation, please refer to the operating instructions for your stereo component.

FRONT PANEL FACILITIES (See page 5)

❶ POWER (STANDBY/ON) switch

When this switch is set to the on position, power is supplied to the tuner's main circuits. The POWER unit's switch is geared to selecting the transformer's secondary so that even in STANDBY position, the unit's circuitry will work as long as the power cord is connected to a power outlet. Disconnect the power cord from the power outlet when you do not plan to use the unit for a long period of time.

NOTE:

- *The memory will be backed up so long as the power cord is not unplugged.*
- *If the power cord is unplugged, the memory will be retained for several days.*

❷ FM MONO indicator (During FM reception)

This lights when the FM MONO switch is turned on.

❸ AM SERVO indicator (During AM reception)

This lights when the AM SERVO switch is turned on.

❹ SILENT SERVO indicator (During FM reception)

This lights when the SILENT SERVO switch is turned on.

❺ DISPLAY SECTION

Ⓐ CCTS indicator
This lights when the CCTS switch is turned on.

Ⓑ TUNED indicator
This lights to confirm fine tuning.

Ⓒ STEREO indicator (FM)
This lights to confirm reception of an FM stereo broadcast.

Ⓓ STATION/SIGNAL display
Shows preset station number (1-24). Shows signal strength (0-9) when the SIGNAL switch is pressed.

Ⓔ Frequency display

❻ CCTS switch (Computer controlled tuning system)

When this switch is set to ON (the CCTS indicator lights), the unit's built-in microcomputer automatically performs the optimum tuning for the station received.

❼ BAND switch

Each time this switch is pressed, FM, AM (MW or LW) reception is selected alternately.
FM and MHz light: FM reception.
AM and kHz light: AM (MW or LW) reception.

❽ TUNING switches (DOWN –, UP +)

These are used to locate stations. Push the "DOWN –" switch to locate a station broadcasting on a lower frequency and the "UP +" switch to locate a station broadcasting on a higher frequency.

❾ SILENT SERVO switch (Operates only during FM reception.)

When this switch is on (as confirmed by the SILENT SERVO indicator), the SILENT SERVO circuit operates after tuning has been completed, cutting out spurious high frequency clock signal harmonics in order to minimize intermodulation (beat) distortion, improve the signal-to-noise ratio, and elevate sound quality.

❿ SIGNAL switch

When this switch is pressed, the operation display will show a digital number "0" – "9". The size of the number corresponds to the strength of the reception signal, "9" representing the strongest, and "0" when there is no signal. In this way, this function can be used when installing an antenna to allow orientation of the antenna for optimum reception.

⓫ AM SERVO switch

When this switch is on (as confirmed by the AM SERVO indicator), the AM SERVO circuit operates to minimize distortion on the AM (MW or LW) band.

⓬ FM MONO switch

Normally, when receiving an FM stereo broadcast, leave this switch OFF. If the broadcast station is distant, or if you are in a poor reception area, the input signals will be weak, and during stereo reception, noise will be prominent, making the broadcast difficult to hear. In such a case, press ON this switch. The broadcast will be reproduced in monaural, however noise will be reduced, enabling the broadcast to be heard more clearly.

NOTE:

- *This switch does not function when you are listening to an AM (MW or LW) broadcast.*
- *The ON or OFF status of the FM MONO switch will be memorized when you preset a station in the STATION CALL switch. By using the PRESETTING FM AND AM (MW or LW) STATIONS function, you can receive an FM broadcast at any time in the same mode.*

⓭ MEMORY switch

This is used to memorize stations.

⓮ STATION CALL switches

These are used to preset and recall broadcasting stations.

LISTENING TO BROADCASTS

Listening to FM or AM (MW or LW) broadcasts.

1 **Press the POWER switch to ON.**

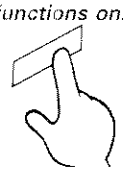
2 **Use the BAND switch to select either the FM or AM (MW or LW) reception band.**
- For FM broadcasts, the "FM" and "MHz" indicators will light.
- For AM (MW or LW) broadcasts, the "AM" and "kHz" indicators will light.

3 **Press the "DOWN –" or "UP +" the TUNING switch.**
[When the CCTS switch is ON:]
- When you press ON the CCTS switch, the internal computer will search for the best tuning point. During this search operation, no sound will be emitted.

When the AM SERVO switch is on (during AM reception):
AM bass distortion is reduced and frequency response extended.
When the SILENT SERVO switch is on (during FM reception):
Beat interference is prevented by cutting out the clock frequency after FM tuning.

NOTE:
Tuning takes slightly more time with the CCTS, AM SERVO, or SILENT SERVO functions on.

Auto tuning:



Press the tuning switch until the frequency starts to change, then release it.

The tuner will automatically search for a broadcasting station, and stop when one is found. To search for another station, press again.
- To interrupt auto tuning, press the TUNING switch.

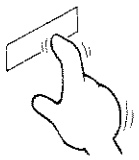
CCTS function

When a station is tuned in, the level indicator will indicate the receiving level for several seconds, then indicate the station number once again.

Goes out after CCTS operation is completed.

Segments "rotate" while the computer is searching for the best tuning point.

Manual tuning:



Press and release quickly

The tuning frequency will change by one step each time the switch is pressed. Press as many times as necessary to tune in the desired station.
- If the switch is held depressed, the reception frequency will change continuously, and stop when the switch is released.

4 **When you wish to receive a different station within the same band, repeat step 3. To receive a station on a different reception band, repeat steps 2 and 3.**

5 **Adjust the volume and tone of the stereo amplifier.**

NOTE:
- *When AUTO TUNING is in use, reception may not be possible over long distances or when signals are weak. At these times MANUAL TUNING is recommended.*
- *SILENT SERVO does not operate at the upper and lower limits (50kHz step: 87.5MHz, 87.55MHz and 108MHz, 100kHz step: 87.5MHz and 108MHz) of the receivable band.*

PRESETTING FM AND AM (MW or LW) STATIONS

(See page 4 Fig. 1 ~ Fig. 4)

You can preset 12 FM and AM (MW or LW) stations in Mode 1 (station call switch No. 1~12), and 12 stations in Mode 2 (station call switch No. 13~24), that is, a total of 24 stations.

1 **Press the POWER switch to ON.**

2 **Use the BAND switch to select either the FM or AM (MW or LW) reception band.**
- For FM broadcasts, the "FM" and "MHz" indicators will light.
- For AM (MW or LW) broadcasts, the "AM" and "kHz" indicators will light.

3 **Use the TUNING switch to tune in the desired station. (Fig. 1)**
- When presetting, if you think it takes too long to receive the signal, with the CCTS switch on, turn off the CCTS switch.

When memorizing an FM station, either press the FM MONO switch to forcibly memorize the station in the monaural mode, or memorize the station in the auto stereo mode (with FM MONO switch left in the OFF position).
Memory also stores the status of the AM SERVO and SILENT SERVO (FM) switches.

4 **Press the MEMORY switch. (Fig. 2)**
- The two lines at the bottom of the station display will flash (about 10 seconds.)

5 **Press the STATION CALL switch.**
- While the display is flashing, press the switch corresponding to the station which you wish to preset or re-preset.

When presetting a station to Mode 1 (e.g. presetting a station to No. 9):

By pressing the station call switch once, the station will be preset to Mode 1. (Fig. 3)

When presetting a station to Mode 2 (e.g. presetting a station to No. 21):

By pressing the station call switch twice, the station will be preset to Mode 2. (Fig. 4)
- After you press the STATION CALL switch, the display will flash for about 2 seconds, then the station will be memorized. If you press another switch while the display is flashing, the station will not be memorized.

Preset station tuning

1 **Turn on the power to the tuner and your stereo amplifier.**

2 **Press the STATION CALL switch into which the desired station has been memorized.**

- To listen to a Mode 1 broadcast, press the switch once, and to listen to a Mode 2 broadcast, press it twice.
- When a STATION CALL switch is pressed, the display first shows the preset number and frequency, then the signal strength and frequency, then the preset number and frequency again.

NOTE:
If, for example, you wish to receive the station memorized in STATION CALL switch "13" when listening to the station memorized in switch "9", press switch "1/13" twice.

In this way, simple and accurate reception of any desired station is possible.

NOTE:
- *The contents of the STATION CALL switches will be preserved for several days, even if the tuner's power cord is unplugged.*
- *If a preset station has been erased, re-preset it.*

Last station memory

- When the POWER switch is pressed to turn power on, the last station received before the power was previously turned off will be received again.
- When power is ON, if the BAND switch is pressed, the last station received before the BAND switch was previously pressed will be received again.

HINTS FOR BETTER RECEPTION (See page 4 Fig. 5 ~ Fig. 7)

EXTERNAL FM ANTENNA

The main advantage of FM over AM is the quality of the broadcast signal. In order to benefit fully from the high signal quality of FM broadcasts, it is recommended that a special-purpose FM antenna be installed. In weak signal areas, a multi-element (3 element, 5 element, 7 element) antenna should be used.

NOTE:
Consult your dealer as to the selection and actual installation of the FM antenna.

FM ANTENNA CONNECTIONS (Figs. 5, 6)

There are two ways of connecting the FM antenna to the antenna input terminals: with a 300-ohm twin-lead feeder or with a 75-ohm coaxial cable. If full justice is to be done to the tuner's performance, a 75-ohm coaxial cable is reommended since it is more immune than the twin-lead feeder to noise and interference from external sources. If an FM antenna has already been erected outdoors, connect it, referring to the figure.

GROUNDING (Fig. 6)

Grounding is recommended if reception of FM programs is impaired by noise. To ground, connect a thick polyvinyl wire to the GND terminal and attach the other end to a metal water pipe or grounding bar or wind it around a copper plate and bury it.

NOTE:
Never connect a wire to a gas pipe for grounding since sparks may ignite the gas.

EXTERNAL AM ANTENNAS (Fig. 7)

If it is not possible to obtain adequate AM reception even by changing the orientation fo the AM loop antenna, a separate indoor antenna, or an outdoor antenna should be installed.

INDOOR AM ANTENNA

Use a vinyl insulated wire (5-6m) and connect one end to the AM antenna terminal and affix the other end to the wall or ceiling, as high as possible.

OUTDOOR AM ANTENNA

If reception quality is not improved sufficiently even when an indoor antenna is used, a vinyl insulated wire should be installed outside and fixed in place.

NOTE:
Do not detach the AM loop antenna when using an indoor or an outdoor AM antenna.

TROUBLESHOOTING

Incorrect operations are often mistaken for trouble and malfunctions. If you think that there is something wrong with this component, check the points below. Sometimes the trouble may lie in another component. Investigate the other components and electrical appliances being used. If the trouble cannot be rectified even after exercising the checks listed below, ask your nearest PIONEER authorized service center or your dealer to carry out repair work.

Symptom	Cause	Remedy
No power	• Has the power cord been disconnected?	• Reconnect the power cord.
No sound	• Have any of the output cords been disconnected or incorrectly connected?	• Connect them properly to the TUNER terminals on the amplifier.
	• Has the antenna been disconnected or is the connection loose?	• Connect the antenna properly.
	• Station memory has been lost.	• Memorize the preset stations once again.
Sound distortion [On the FM band]	• Are the signals weak and reception poor?	• Substitute an FM outdoor antenna for the FM T-type antenna. • Set the FM MONO switch to ON (reception will be in monaural).
	• Static from other appliances (particularly automobiles) or multipath reflection (radio waves beamed off mountains and tall buildings and not received directly.)	• Try varying the height and direction of the antenna or use an FM outdoor antenna substituting a 75-ohm coaxial cable for the standard cable and fixing it as far away as possible from the street.
Sound distortion [On the MW or LW band]	• Is the AM loop antenna oriented poorly or located in an unsatisfactory position?	• Change the direction of the antenna until best reception is obtained as far as possible from tuner.
	• Static from other electrical appliances (fluorescent lights/motors?)	• Switch off other appliances or keep as far away as possible from the tuner when in use.
Stereo broadcasts not received in stereo.	• Are the signals weak, with insufficient input?	• Change to an outdoor FM antenna.
	• Is the FM MONO switch ON?	• Press the FM MONO switch OFF.

SPECIFICATIONS

[F-X440]

FM Tuner Section

Frequency range ..... 87.5 MHz to 108 MHz
Usable Sensitivity ..... 14.2 dBf, IHF (1.4μV/75Ω)
50 dB Quieting Sensitivity ..... Stereo; 36.2 dBf, IHF (17.7μV/75Ω)
Signal-to-Noise Ratio ..... Mono; 80 dB (at 80 dBf)
(SILENT SERVO ON) Stereo; 78 dB (at 80 dBf)
Distortion ..... 0.4% (1 kHz)
Alternate Channel Selectivity ..... 65 dB (400 kHz)
Stereo Separation ..... 45 dB (1 kHz)
Frequency Response ..... 30 Hz to 15 kHz±1 dB
Antenna Input ..... 300Ω balanced
75Ω unbalanced

AM Tuner Section

Frequency range ..... 531 kHz to 1,602 kHz
Sensitivity (IHF, Loop antenna) 300μV/m
Selectivity ..... 20 dB
Signal-to-Noise Ratio ..... 50 dB
Antenna ..... Loop Antenna

Audio Section

Output
FM (100% MOD) ..... 650 mV/5.1 kΩ
AM (30% MOD) ..... 150 mV/5.1 kΩ

Miscellaneous

Power requirements
A.C. 110V/120 – 127V/220V/240V (switchable), 50/60 Hz
Power Consumption ..... 10 W
Dimensions ..... 360 (W)×75 (H)×333 (D) mm
14-3/16 (W)x2-15/16 (H)x13-1/8 (D) in
Weight (without package) ..... 3.2 kg
(7 lb 1 oz)

Furnished Parts

FM T-type Antenna 1
AM Loop Antenna 1
Pin plug and Miniplug connecting cord 1
Operating instructions 1

NOTE:
Specifications and design subject to possible modification without notice due to improvements.

[F-X440L]

FM Tuner Section

Frequency range ..... 87.5 MHz to 108 MHz
Usable Sensitivity ..... 14.2 dBf, IHF (1.4μV/75Ω)
50 dB Quieting Sensitivity ..... Stereo; 36.2 dBf, IHF (17.7μV/75Ω)
Sensitivity (DIN) ..... Mono; 0.9μV/75Ω
Stereo; 50μV/75Ω
Signal-to-Noise Ratio ..... Mono; 80 dB (at 80 dBf)
(SILENT SERVO ON) Stereo; 78 dB (at 80 dBf)
Signal-to-Noise Ratio (DIN) ..... Mono; 66 dB
Stereo; 60 dB
Distortion ..... 0.4% (1 kHz)
Alternate Channel Selectivity ..... 65 dB (400 kHz)
Stereo Separation ..... 45 dB (1 kHz)
Frequency Response ..... 30 Hz to 15 kHz±1 dB
Antenna Input ..... 300Ω balanced
75Ω unbalanced

AM (MW) Tuner Section

Frequency range ..... 531 kHz to 1,602 kHz
Sensitivity (IHF, Loop antenna) 300μV/m
Selectivity ..... 20 dB
Signal-to-Noise Ratio ..... 50 dB
Antenna ..... Loop Antenna

LW Tuner Section

Frequency range ..... 153 kHz to 281 kHz
Sensitivity (IHF, loop antenna) 1,000μV/m
Antenna ..... Loop Antenna

Audio Section

Output
FM (100% MOD) ..... 650 mV/5.1 kΩ
AM (30% MOD) ..... 150 mV/5.1 kΩ

Miscellaneous

Power requirements ..... a.c. 240 Volts ~ , 50/60 Hz
Power Consumption ..... 10 W
Dimensions ..... 360 (W)×75 (H)×333 (D) mm
Weight (without package) ..... 3.2 kg

Furnished Parts

FM T-type Antenna 1
AM Loop Antenna 1
Pin plug and Miniplug connecting cord 1
Operating instructions 1

NOTE:
Specifications and design subject to possible modification without notice due to improvements.

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS [USA] INC. 2265 East 220th Street Long Beach, California 90810 U.S.A.
P.O. BOX 1720 Long Beach, California 90801-1720 U.S.A.
PIONEER ELECTRONICS OF CANADA, INC. 505 Cochrane Drive, Markham, Ontario L3R 8E3 Canada
PIONEER ELECTRONIC [EUROPE] N.V. Keetberglaan 1, 2740 Beveren, Belgium TEL: 03/775·28·08
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: [03] 580-9911

〈88G03AF0C04〉

Printed in Japan <ARB1127-B>